

S/N: 10/595,416
Reply to Office Action of December 30, 2008

Atty Dkt No. HERL0101PUSA

Amendments to the Drawings:

The attached sheets of drawings includes changes to Figs. 1-2 and add Fig. 4. These sheets, which include Figs. 1-2 and 4 replace the original sheets including Figs. 1-2.

Attachment: Replacement Sheets 1
New Sheet 3

Remarks

This amendment is in response to the office action dated December 30, 2008. Claims 1-13 have been amended, the specification has been amended, and replacement/new figures have been provided. No new matter has been added. Reconsideration of the present application is requested in view of the present amendment.

Claims 4, 5, 8, 12, and 13 have been rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. The same claims have been rejected under 35 U.S.C. 112, second paragraph as being indefinite.

The specification has been amended to add numerals to the detailed description corresponding to the amended figures and also to add language from the original claims to the detailed description to further provide proper written description and enablement. As the language was present in the claims of the application as filed, no new matter has been added. Minor formatting and grammatical errors have also been fixed.

Claim 4, as amended, recites a gasification boiler as claimed in claim 1 having a substantially vertical pipe arranged centrally within the ash separator, the pipe having a lower opening approximately halfway up a height of the ash separator.

The term "flue" has been removed from the pipe to more closely match the specification, and the structure and location of the pipe has been further defined. Also, "the opening" has been changed to "a lower opening" to provide proper antecedent basis.

Claim 5, as amended, recites "a gasification boiler as claimed in claim 4, characterized in that a circular baffle plate is fitted below the opening of the pipe in such a manner that an annular opening for the depositing of ash remains from an outer wall of the ash separator. . ." Proper antecedent basis has now been provided for the outer wall.

Claim 8 has similar limitations to claim 4, but is dependent from claim 2. It has been amended in a similar fashion to claim 4. Claims 12 and 13 are dependent from claim 4.

Accordingly, Applicant submits that claims 4, 5, 8, 12, and 13 are sufficiently enabled and definite in view of the present amendment and substitute specification and requests the withdrawal of the rejections under 35 U.S.C. 112 to said claims.

The drawings have been objected to for not showing every feature of the invention specified in the claims, particularly the flue pipe in claims 5 and 9. Also, additional views have been requested by the Examiner.

Replacement sheet 1 has been provided to replace figures 1-2 and new sheet 3, containing Fig. 4 has been added to provide an additional view. The corrected drawings contain additional numerals to point out features contained in the specification but not previously numbered.

Accordingly, Applicant respectfully requests that the objection to the drawings be withdrawn.

Claims 1, 3-4, 6, 9, and 11-12 have been rejected under 35 U.S.C. 102(b) as being anticipated by WO 03/060039 (US 2005/0051918) to Muramatsu et al., herein after "*Muramatsu*." Applicant respectfully requests reconsideration in view of the following remarks.

Claim 1, as amended, recites a gasification boiler for solid fuels, the boiler comprising:

- a fuel and gasification space closable by a filling door and having air feeds and depressions for collecting ash, the depressions disposed adjacent to a grating arranged at the bottom of the fuel and gasification space;

- a combustion space situated below the grating;

- a secondary combustion chamber connected to an outlet of the combustion space;

and

an ash separator located downstream from the secondary combustion chamber, the ash separator being connected to a known heat exchanger.

Muramatsu does not anticipate claim 1 as amended. *Muramatsu* teaches a smokeless porous carbon production system in which the ash separator (26) is located upstream, rather than downstream, from the combustion chamber (16). As seen in Fig. 6, the gas flow is from fuel and gasification space (12) to the combustion space (13) and then to the combustion chamber (16). The ash separator is merely a guide chute (26) that allows carbonaceous material to fall through the grate (31) and collect, it does not remove small ash particles from the gas flow and is not located downstream from the combustion chamber.

Also, *Muramatsu* does not teach depressions for collecting ash adjacent to a grating arranged at the bottom of the fuel and gasification space. The grating (31) of *Muramatsu* is located below the combustion space (13), not at the bottom of the fuel and gasification space (12). This allows larger particles to pass into the combustion space, which in turn allows larger sizes of ash to enter the gas flow. This makes sense for *Muramatsu*, since his invention is concerned with creating porous carbon and not generating energy via a heat exchanger, but it is detrimental to the invention of claim 1. The "depressions" as cited by the Examiner in Fig. 4 are really just the openings of the grate (31), as shown in Fig. 3. The openings in the grate are not for the purpose of collecting ash, like in amended claim 1, but rather allow the ash to pass through to a chute below. The depressions of claim 1 prevent large particles from continuing through the boiler and entering the combustion gas flow, allowing the particles to outgas and not inhibit or slow the flow.

Claim 3 recites that the combustion chamber is cylindrical and connected at the bottom tangentially to the outlet of the combustion space, so that the combustion gas rises therein in a swirling manner and in that the combustion chamber can be closed at the top by a cover. *Muramatsu* does not teach that the combustion chamber is attached tangentially to the combustion space in paragraph 0032 as stated by the Examiner. Paragraph 0032 merely states

that combustion chamber (16) communicates with the high heat treatment chamber (13) through a lower opening.

Claim 4 recites that the ash separator is cylindrical and connected at the top tangentially to the outlet of the combustion chamber and that a pipe is arranged centrally within the ash separator and has a lower opening approximately halfway up a height of the ash separator. *Muramatsu* does not teach a cylindrical ash separator connected to the outlet of a combustion chamber. Rather, the ash separator of *Muramatsu* is connected to the outlet of the high heat treatment chamber and does not contain a pipe, let alone a pipe arranged centrally and having a lower opening halfway up a height of the ash separator.

Claim 9 is similar to claim 4, but is dependant on claim 3 instead of claim 1. Claims 6, 11, and 12 are ultimately dependent on claim 1 and are therefore patentable for at least the reasons above. Accordingly, Applicant respectfully submits that claims 1, 3, 4, 6, 9, and 11-12 are not anticipated by *Muramatsu* and request that the rejection under 35 U.S.C. 102(b) to said claims be withdrawn.

Claims 5 and 13 have been rejected under 35 USC 103(a) as being unpatentable over *Muramatsu* in view of US Patent No. 5,630,367 to Kobata et al., hereinafter "*Kobata*." Claims 5 and 13 are ultimately dependent on claim 1. As described above, *Muramatsu* fails to teach all the elements of claim 1. *Kobata* does not rectify the deficiencies of *Muramatsu*, therefore claims 5 and 13 are patentable for at least the reasons above. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. 103(a) to claims 5 and 13 be withdrawn.

Claims 2, 7-8, and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Muramatsu* in view of US Patent No. 4,351,249 to Inovius, hereinafter "*Inovius*." Claims 2, 7-8, and 10 are ultimately dependent on claim 1. As described above, *Muramatsu* fails to teach all the elements of claim 1. *Inovius* does not rectify the deficiencies of *Muramatsu*, therefore claims 2, 7-8, and 10 are patentable for at least the reasons above.

Also, the combination of the depression (10) in *Inovius* and the "depressions" of *Muramatsu* is inappropriate. As discussed above, the "depressions," as described by the Examiner, are really just the openings of the grate and would not function to collect ash therein (as in claim 1). In fact, it would be problematic for the ash to be contained in the grate in *Muramatsu*, because the purpose of the invention is to collect the porous carbon in the carbon container (25) after it has passed through the chute (26) having a water-cooled wall to promote crystallizability (0035). Therefore, *Muramatsu* would have no reason or motivation to combine the depression of *Inovius* with his invention.

Accordingly, Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(a) to claims 2, 7-8, and 10.

Reconsideration and reexamination of the application is respectfully requested. Applicant has made a genuine effort to respond to each of the Examiner's objections and rejections in advancing the prosecution of this case. Applicant believes that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If any additional issues need to be resolved, the Examiner is requested to telephone the undersigned at his convenience.

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The Petition fee of \$65.00 is being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. The Commissioner is hereby authorized to charge any additional fees or credit any overpayments as a result of the filing of this paper to Deposit Account No. 02-3978.

Respectfully submitted,

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